

Twelfth Census of the United States.

CENSUS BULLETIN.

No. 183.

WASHINGTON, D. C.

June 6, 1902.

AGRICULTURE.

MICHIGAN.

Hon. WILLIAM R. MERRIAM,

Director of the Census.

SIR: I have the honor to transmit herewith, for publication in bulletin form, the statistics of agriculture for the state of Michigan, taken in accordance with the provisions of section 7 of the act of March 3, 1899. This section requires that—

The schedules relating to agriculture shall comprehend the following topics: Name of occupant of each farm, color of occupant, tenure, acreage, value of farm and improvements, acreage of different products, quantity and value of products, and number and value of live stock. All questions as to quantity and value of crops shall relate to the year ending December thirty-first next preceding the enumeration.

A "farm," as defined by the Twelfth Census, includes all the land, under one management, used for raising crops and pasturing live stock, with the wood lots, swamps, meadows, etc., connected therewith. It includes also the house in which the farmer resides, and all other buildings used by him in connection with his farming operations.

The farms of Michigan, June 1, 1900, numbered 203,261, and were valued at \$582,517,710, of which amount, \$158,947,760, or 27.3 per cent, represents the value of buildings, and \$423,569,950, or 72.7 per cent, the value of the land and improvements other than buildings. On the same date the value of farm implements and machinery was \$28,795,380, and of live stock, \$79,042,644. These values, added to that of farms, give \$690,355,734, the "total value of farm property."

The products derived from domestic animals, poultry, and bees, including animals sold or slaughtered on farms, are referred to in this bulletin as "animal products." The total value of such products, together with the value of

all crops, is termed "total value of farm products." This value for 1899 was \$146,547,881, of which amount \$53,921,966, or 36.8 per cent, represents the value of animal products, and \$92,625,715, or 63.2 per cent, the value of crops, including forest products. The total value of farm products for 1899 exceeds that reported for 1889 by \$62,896,291, or 75.2 per cent. A portion of this increase is doubtless the result of a more detailed enumeration in 1900 than heretofore.

The value of "net farm products," or the "gross farm income," is obtained by deducting from the total value of farm products the value of the products fed to live stock on the farms of the producers. In 1899 the reported value of products fed was \$83,761,400, leaving \$102,786,281 as the gross farm income. The ratio which this latter amount bears to the "total value of farm property" is referred to in this bulletin as the "percentage of gross income upon investment." For Michigan in 1899 it was 15.9 per cent.

As no reports of expenditures for taxes, interest, insurance, feed for stock, and similar items have been obtained by any census, no statement of net farm income can be given.

The statistics presented in this bulletin will be treated in greater detail in the report on agriculture in the United States. The present publication is designed to present a summarized advance statement for Michigan.

Very respectfully,

L. G. Powers.

Chief Statistician for Agriculture.

AGRICULTURE IN MICHIGAN.

GENERAL STATISTICS.

The total land surface of Michigan comprises 57,430 square miles, or 36,755,200 acres, of which 17,561,698 acres, or 47.8 per cent, are included in farms.

Michigan is divided by the Great Lakes into two peninsulas, the upper and the lower. The upper peninsula, famed for its mineral wealth, is rugged and picturesque in the west, while the eastern portion is an undulating plateau nearly covered by extensive pine forests. Agriculture is a minor industry.

The surface of the lower peninsula is almost uniformly level and the entire central part, from Lake Michigan to Lake Huron, is a broad tract of fine agricultural land, seldom attaining an elevation of 75 feet above the surface of the lakes. This region is dotted with hundreds of small lakes and shallow swamps, filled with marl and peat. These swamps, when properly drained, are exceedingly fertile and productive, and yield immense quantities of celery and garden vegetables. The soil is a glacial drift of varying depth and fertility.

NUMBER AND SIZE OF FARMS.

The following table gives, by decades since 1850, the number of farms, the total and average acreage, and the per cent of farm land improved.

TABLE 1.—FARMS AND FARM ACREAGE: 1850 TO 1900.

| YEAR. | Number of farms. | NUMBER OF ACRES IN FARMS. | | | | Per cent of farm land improved. |
|-------|------------------|---------------------------|------------|-------------|----------|---------------------------------|
| | | Total. | Improved. | Unimproved. | Average. | |
| 1900 | 203,261 | 17,561,698 | 11,799,250 | 5,762,448 | 85.4 | 87.2 |
| 1890 | 172,344 | 14,785,685 | 9,865,350 | 4,920,285 | 85.8 | 65.7 |
| 1880 | 154,008 | 13,807,240 | 8,296,862 | 5,510,378 | 89.7 | 60.1 |
| 1870 | 98,786 | 10,019,142 | 5,096,939 | 4,922,203 | 101.4 | 50.9 |
| 1860 | 62,422 | 7,080,894 | 3,476,295 | 3,554,598 | 112.6 | 49.4 |
| 1850 | 84,089 | 4,388,890 | 1,020,110 | 2,454,780 | 128.6 | 44.0 |

The number of farms reported, June 1, 1900, was nearly six times as great as the number reported in 1850, and 17.9 per cent greater than in 1890, but during the half century the total area in farms increased only a little over

four times. In consequence of the disparity in these rates of increase, the average size of farms decreased in each decade except the last. The percentage of improved farm land has increased in each decade, but owing to a more strict interpretation of the term "improved land" by the Twelfth Census than by preceding censuses, the gain for the last decade is comparatively slight.

FARM PROPERTY AND PRODUCTS.

Table 2 presents a summary of the principal statistics relating to farm property and products for each census year, beginning with 1850.

TABLE 2.—VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND OF FARM PRODUCTS: 1850 TO 1900.

| YEAR. | Total value of farm property. | Land, improvements, and buildings. | Implement and machinery. | Live stock. | Farm products. ¹ |
|-------------------|-------------------------------|------------------------------------|--------------------------|--------------|-----------------------------|
| 1900 | \$890,355,784 | \$582,517,710 | \$28,795,880 | \$79,042,644 | \$146,547,681 |
| 1890 | 647,938,255 | 556,190,670 | 22,182,609 | 69,564,955 | 83,651,330 |
| 1880 | 574,242,654 | 499,103,181 | 19,419,369 | 55,720,118 | 91,159,538 |
| 1870 ² | 461,762,426 | 398,240,578 | 18,711,979 | 49,809,869 | \$81,508,623 |
| 1860 | 190,371,098 | 163,536,495 | 5,819,882 | 23,714,771 | ----- |
| 1850 | 62,772,551 | 51,872,446 | 2,891,871 | 8,008,784 | ----- |

¹ For year preceding that designated.

² Values for 1870 were reported in depreciated currency. To reduce to specie basis of the other years they must be diminished one-fifth.

³ Includes betterments and additions to live stock.

The gain in the last decade in the total value of farm property was \$42,417,479, or 8.5 per cent. The increase in the value of land, improvements, and buildings was \$26,327,040, or 4.7 per cent; that of implements and machinery, \$6,612,780, or 29.8 per cent; and in that of live stock, \$9,477,659, or 18.6 per cent. The value of farm products for 1899 exceeds that for 1889 by \$62,896,291, or 75.2 per cent. A portion of this increase, and of that shown for implements and machinery, is doubtless the result of a more detailed enumeration in 1900 than heretofore.

COUNTY STATISTICS.

Table 3 gives a statement of general agricultural statistics by counties.

TABLE 3.—NUMBER AND ACREAGE OF FARMS, AND VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, JUNE 1, 1900, WITH VALUE OF PRODUCTS OF 1899 NOT FED TO LIVE STOCK, AND EXPENDITURES IN 1899 FOR LABOR AND FERTILIZERS, BY COUNTIES.

| COUNTIES. | NUMBER OF FARMS. | | ACRES IN FARMS. | | VALUES OF FARM PROPERTY. | | | | Value of products not fed to live stock. | EXPENDITURES. | |
|-----------|------------------|-----------------|-----------------|------------|---|---------------|--------------------------|--------------|--|---------------|--------------|
| | Total. | With buildings. | Total. | Improved. | Land and improvements (except buildings). | Buildings. | Implement and machinery. | Live stock. | | Labor. | Fertilizers. |
| The State | 203,261 | 198,053 | 17,561,698 | 11,799,250 | \$423,569,950 | \$158,947,760 | \$28,795,880 | \$79,042,644 | \$109,786,281 | \$10,717,220 | \$492,360 |
| Alcona | 748 | 728 | 80,798 | 23,891 | 601,910 | 194,120 | 71,840 | 281,816 | 248,995 | 19,000 | 30 |
| Alger | 124 | 120 | 14,586 | 2,290 | 85,290 | 27,080 | 10,740 | 80,328 | 48,791 | 5,240 | 890 |
| Allegan | 3,089 | 5,949 | 461,069 | 888,514 | 12,228,260 | 4,856,110 | 825,260 | 1,945,598 | 2,825,954 | 280,740 | 13,150 |
| Alpena | 1,187 | 1,157 | 120,285 | 88,238 | 988,470 | 381,630 | 122,880 | 357,008 | 471,709 | 32,630 | 1,940 |
| Antrim | 1,283 | 1,248 | 106,327 | 55,624 | 1,278,210 | 546,250 | 150,930 | 446,100 | 678,252 | 55,920 | 800 |

TABLE 3.—NUMBER AND ACREAGE OF FARMS, AND VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, JUNE 1, 1900, WITH VALUE OF PRODUCTS OF 1899 NOT FED TO LIVE STOCK, AND EXPENDITURES IN 1899 FOR LABOR AND FERTILIZERS. BY COUNTIES—Continued.

| COUNTIES. | NUMBER OF FARMS. | | ACRES IN FARMS. | | VALUES OF FARM PROPERTY. | | | | EXPENDITURES. | | |
|---------------------|------------------|-----------------|-----------------|-----------|---|------------|-------------------------------|-------------|--|----------|--------------|
| | Total. | With buildings. | Total. | Improved. | Land and improvements (except buildings). | Buildings. | Implementments and machinery. | Live stock. | Value of products not fed to live stock. | Labor. | Fertilizers. |
| Arenac..... | 1,186 | 1,151 | 79,788 | 35,526 | \$799,020 | \$314,580 | \$110,060 | \$900,281 | \$280,241 | \$20,820 | \$130 |
| Baraga..... | 241 | 237 | 29,058 | 5,809 | 186,946 | 90,470 | 25,240 | 57,748 | 68,111 | 17,050 | 640 |
| Barry..... | 3,570 | 3,486 | 342,157 | 251,826 | 7,732,010 | 2,814,100 | 558,050 | 1,467,409 | 2,048,212 | 196,770 | 4,290 |
| Bay..... | 3,193 | 3,115 | 196,343 | 120,605 | 5,610,130 | 1,814,820 | 465,550 | 1,006,945 | 1,406,587 | 210,700 | 7,470 |
| Benzie..... | 991 | 890 | 67,814 | 30,951 | 880,750 | 356,580 | 81,230 | 192,255 | 263,239 | 18,870 | 950 |
| Berrien..... | 5,091 | 4,937 | 340,990 | 263,361 | 15,255,280 | 5,077,270 | 748,580 | 1,583,205 | 3,206,441 | 446,730 | 17,990 |
| Branch..... | 3,475 | 3,429 | 309,216 | 227,385 | 8,794,170 | 3,541,080 | 521,740 | 1,028,843 | 2,217,743 | 182,640 | 2,650 |
| Calhoun..... | 4,100 | 4,002 | 426,500 | 321,221 | 11,263,550 | 4,805,800 | 688,720 | 1,961,278 | 2,996,369 | 331,350 | 10,740 |
| Cass..... | 2,609 | 2,536 | 307,051 | 232,601 | 8,619,530 | 2,593,530 | 417,700 | 1,177,451 | 1,623,430 | 163,750 | 3,830 |
| Charlevoix..... | 1,265 | 1,254 | 104,930 | 45,076 | 1,200,540 | 546,490 | 149,930 | 413,873 | 555,099 | 24,370 | 980 |
| Cheboygan..... | 1,191 | 1,119 | 65,689 | 35,879 | 1,059,470 | 428,060 | 125,830 | 313,047 | 469,191 | 38,070 | 1,810 |
| Chippewa..... | 1,033 | 1,038 | 121,287 | 48,574 | 1,203,390 | 382,780 | 146,760 | 420,639 | 515,003 | 56,550 | 510 |
| Clare..... | 852 | 833 | 32,236 | 23,420 | 657,790 | 227,390 | 55,990 | 257,368 | 203,812 | 19,850 | 300 |
| Clinton..... | 8,777 | 8,722 | 356,827 | 277,631 | 10,473,460 | 3,838,580 | 630,090 | 1,945,461 | 2,613,427 | 229,750 | 1,350 |
| Crawford..... | 228 | 222 | 29,248 | 7,823 | 123,650 | 48,300 | 22,010 | 58,308 | 105,487 | 13,450 | 120 |
| Delta..... | 868 | 849 | 38,710 | 23,058 | 881,530 | 390,930 | 136,730 | 327,962 | 535,441 | 60,790 | 750 |
| Dickinson..... | 118 | 102 | 12,395 | 5,070 | 133,210 | 68,950 | 17,700 | 57,356 | 73,641 | 25,000 | 1,070 |
| Eaton..... | 4,193 | 4,105 | 351,743 | 264,528 | 9,640,330 | 3,946,480 | 661,900 | 1,816,683 | 2,894,165 | 290,890 | 7,570 |
| Emmet..... | 1,134 | 1,103 | 131,701 | 35,188 | 1,369,000 | 497,610 | 136,490 | 309,204 | 491,735 | 29,150 | 210 |
| Genesee..... | 4,501 | 4,411 | 460,681 | 312,826 | 11,103,430 | 4,879,160 | 702,670 | 2,192,207 | 3,170,858 | 310,340 | 15,830 |
| Gladwin..... | 766 | 750 | 60,878 | 25,000 | 593,130 | 206,360 | 78,940 | 218,506 | 207,080 | 12,030 | 40 |
| Gogebic..... | 80 | 76 | 3,701 | 1,044 | 83,820 | 24,780 | 5,440 | 18,014 | 15,783 | 6,250 | 630 |
| Grand Traverse..... | 1,722 | 1,682 | 143,049 | 85,433 | 2,502,220 | 1,019,820 | 226,480 | 507,877 | 863,484 | 82,000 | 1,400 |
| Gratiot..... | 4,587 | 4,523 | 322,652 | 221,038 | 7,311,480 | 2,591,850 | 635,790 | 1,821,789 | 2,264,193 | 159,170 | 3,710 |
| Hillsdale..... | 4,391 | 4,322 | 390,614 | 297,181 | 10,045,720 | 4,520,450 | 666,870 | 2,052,270 | 2,885,287 | 230,100 | 7,330 |
| Houghton..... | 362 | 340 | 48,452 | 18,193 | 503,350 | 227,610 | 60,680 | 123,641 | 254,031 | 42,820 | 830 |
| Huron..... | 4,871 | 4,758 | 486,096 | 307,044 | 7,462,440 | 2,911,960 | 774,630 | 2,192,866 | 2,340,970 | 170,680 | 16,110 |
| Ingham..... | 3,815 | 3,673 | 346,444 | 256,088 | 9,548,900 | 3,485,810 | 568,250 | 1,701,076 | 2,697,711 | 245,280 | 8,720 |
| Ionia..... | 4,032 | 3,944 | 335,468 | 278,503 | 9,489,960 | 3,883,850 | 626,880 | 1,857,550 | 2,867,122 | 248,590 | 10,050 |
| Iosco..... | 743 | 714 | 63,353 | 25,156 | 576,920 | 237,403 | 78,100 | 242,806 | 248,241 | 23,180 | 480 |
| Iron..... | 231 | 221 | 22,979 | 5,250 | 133,460 | 65,780 | 18,200 | 65,999 | 67,171 | 7,600 | 20 |
| Isabella..... | 3,436 | 3,376 | 254,002 | 168,462 | 4,271,310 | 1,597,170 | 360,520 | 1,190,876 | 1,898,182 | 94,890 | 1,690 |
| Jackac..... | 3,560 | 3,777 | 426,215 | 316,613 | 10,991,990 | 4,460,920 | 691,020 | 1,958,502 | 2,874,495 | 321,860 | 11,570 |
| Kalamazoo..... | 3,308 | 3,217 | 336,537 | 207,949 | 10,481,320 | 3,671,330 | 619,650 | 1,461,537 | 2,298,485 | 287,070 | 11,890 |
| Kalamazoo..... | 679 | 667 | 56,892 | 27,388 | 674,070 | 295,390 | 86,660 | 209,665 | 328,020 | 21,370 | 850 |
| Kent..... | 6,554 | 6,410 | 490,090 | 362,902 | 15,030,270 | 5,714,890 | 931,580 | 2,231,759 | 3,425,825 | 370,140 | 24,590 |
| Keweenaw..... | 22 | 18 | 3,703 | 1,541 | 28,580 | 8,870 | 4,260 | 2,806 | 2,806 | 2,370 | 20 |
| Lake..... | 625 | 607 | 60,421 | 24,831 | 515,590 | 208,140 | 64,200 | 184,638 | 190,904 | 6,960 | 180 |
| Leape..... | 4,051 | 3,980 | 398,611 | 288,733 | 8,017,410 | 3,431,170 | 568,700 | 1,807,783 | 2,353,382 | 248,490 | 12,980 |
| Leelanaw..... | 1,335 | 1,316 | 142,833 | 65,528 | 1,008,700 | 917,770 | 193,380 | 459,193 | 606,419 | 63,160 | 1,090 |
| Lenawee..... | 5,662 | 5,600 | 469,845 | 374,770 | 15,493,740 | 6,339,160 | 966,490 | 2,791,376 | 4,005,543 | 412,970 | 19,140 |
| Livingston..... | 3,082 | 3,027 | 351,687 | 250,965 | 8,393,360 | 3,675,550 | 499,010 | 1,619,951 | 2,071,804 | 209,893 | 890 |
| Luce..... | 141 | 135 | 13,730 | 1,330 | 137,560 | 50,970 | 16,330 | 44,534 | 78,003 | 11,940 | 680 |
| Mackinac..... | 394 | 387 | 47,493 | 15,117 | 383,680 | 125,980 | 17,500 | 121,201 | 152,485 | 21,970 | 120 |
| Macomb..... | 3,852 | 3,807 | 286,966 | 222,758 | 11,325,700 | 3,993,430 | 703,410 | 1,693,112 | 2,244,447 | 260,920 | 84,080 |
| Manistee..... | 1,311 | 1,258 | 114,636 | 53,098 | 1,684,680 | 712,510 | 158,800 | 441,126 | 517,898 | 49,090 | 1,090 |
| Marquette..... | 513 | 491 | 63,093 | 17,818 | 623,850 | 241,150 | 61,150 | 172,103 | 217,511 | 30,960 | 6,940 |
| Mason..... | 1,885 | 1,812 | 191,162 | 71,974 | 2,498,710 | 937,260 | 224,490 | 503,817 | 553,034 | 57,260 | 383 |
| Meenosa..... | 2,370 | 2,349 | 250,077 | 131,390 | 2,765,820 | 1,079,220 | 277,340 | 702,283 | 886,621 | 50,260 | 1,190 |
| Menominee..... | 1,430 | 1,368 | 132,710 | 46,029 | 1,493,950 | 622,830 | 107,540 | 517,120 | 579,865 | 81,440 | 1,700 |
| Midland..... | 2,153 | 2,062 | 148,817 | 72,214 | 1,990,540 | 800,970 | 208,130 | 603,178 | 707,087 | 28,690 | 1,090 |
| Missaukee..... | 1,026 | 987 | 101,414 | 33,498 | 761,420 | 281,000 | 305,353 | 375,190 | 375,190 | 19,510 | 200 |
| Monroe..... | 4,458 | 4,338 | 328,490 | 266,138 | 11,210,760 | 4,052,650 | 710,330 | 1,729,484 | 2,775,428 | 294,470 | 20,850 |
| Montcalm..... | 4,714 | 4,613 | 371,511 | 243,756 | 5,701,450 | 2,476,770 | 490,420 | 1,403,929 | 1,746,545 | 145,410 | 2,990 |
| Montmorency..... | 336 | 320 | 35,322 | 11,029 | 295,020 | 92,620 | 34,560 | 103,638 | 151,248 | 17,530 | 300 |
| Muskegon..... | 2,331 | 2,262 | 175,057 | 98,655 | 3,059,360 | 1,254,560 | 251,400 | 638,686 | 983,096 | 84,220 | 5,080 |
| Newaygo..... | 2,846 | 2,748 | 281,464 | 136,997 | 3,153,600 | 1,506,020 | 301,210 | 843,085 | 873,572 | 60,870 | 190 |
| Oakland..... | 4,977 | 4,841 | 548,393 | 405,014 | 15,864,060 | 6,817,280 | 817,980 | 2,439,705 | 3,399,888 | 462,090 | 16,650 |
| Ogemaw..... | 2,650 | 2,573 | 213,610 | 120,601 | 3,585,400 | 1,465,620 | 233,080 | 729,784 | 1,051,925 | 83,180 | 1,810 |
| Ogemaw..... | 811 | 790 | 72,846 | 28,229 | 685,460 | 220,830 | 66,750 | 264,020 | 241,287 | 9,380 | 3,840 |
| Ontonagon..... | 187 | 183 | 26,013 | 5,570 | 223,500 | 77,850 | 23,470 | 47,804 | 69,684 | 11,490 | --- |
| Oscoda..... | 2,287 | 2,230 | 187,664 | 96,232 | 2,140,360 | 819,940 | 281,230 | 678,029 | 824,100 | 52,740 | 4,210 |
| Oscoda..... | 210 | 207 | 30,587 | 7,976 | 147,000 | 44,550 | 16,870 | 71,638 | 71,460 | 5,630 | --- |
| Otsego..... | 570 | 556 | 47,605 | 21,801 | 535,610 | 191,180 | 66,640 | 162,819 | 255,978 | 24,030 | 910 |
| Ottawa..... | 4,522 | 4,401 | 319,440 | 230,204 | 8,393,730 | 3,183,460 | 653,100 | 1,481,133 | 2,200,192 | 142,930 | 10,680 |
| Presque Isle..... | 846 | 834 | 88,604 | 26,034 | 845,560 | 257,160 | 118,260 | 252,151 | 372,483 | 29,560 | --- |
| Roscommon..... | 136 | 134 | 23,201 | 4,219 | 100,280 | 22,060 | 9,350 | 44,267 | 59,808 | 5,880 | 1,910 |
| Saginaw..... | 5,818 | 5,652 | 484,993 | 283,021 | 11,074,520 | 4,144,200 | 882,610 | 2,816,470 | 2,826,988 | 305,660 | 2,420 |
| St. Clair..... | 4,680 | 4,619 | 422,017 | 310,021 | 10,140,790 | 3,501,940 | 623,820 | 1,747,679 | 2,933,166 | 185,420 | 33,170 |
| St. Joseph..... | 2,697 | 2,620 | 303,513 | 253,827 | 8,144,950 | 2,776,420 | 381,063 | 1,060,507 | 1,659,269 | 166,200 | 4,790 |
| Sanilac..... | 5,820 | 5,641 | 537,273 | 398,039 | 8,269,680 | 3,166,730 | 705,643 | 2,424,463 | 2,784,242 | 180,810 | 11,510 |
| Schoolcraft..... | 352 | 327 | 88,664 | 10,613 | 314,900 | 124,140 | 37,170 | 91,042 | 137,851 | 13,390 | 730 |
| Shiawassee..... | 3,763 | 3,668 | 384,895 | 260,450 | 8,941,480 | 3,656,550 | 616,700 | 1,815,028 | 2,506,845 | 220,400 | 2,180 |
| Tuscola..... | 5,492 | 5,307 | 443,875 | 301,147 | 9,183,020 | 3,803,280 | 746,580 | 2,176,877 | 2,719,722 | 270,770 | 6,880 |
| Van Buren..... | 4,842 | 4,670 | 363,141 | 277,786 | 10,728,540 | 3,627,660 | 580,150 | 1,500,297 | 2,437,110 | 288,770 | 12,700 |
| Washtenaw..... | 4,151 | 4,042 | 422,902 | 332,344 | 12,430,660 | 5,990,720 | 816,690 | 2,215,695 | 3,216,564 | 489,520 | 9,830 |
| Wayne..... | 5,131 | 5,042 | 325,891 | 255,835 | 26,437,410 | 6,836,470 | 911,350 | 1,937,766 | 3,356,943 | 451,410 | 57,760 |
| Wexford..... | 1,340 | 1,310 | 106,554 | 51,241 | 1,146,420 | 441,390 | 120,650 | 402,951 | 548,480 | 82,480 | 120 |

In most counties the number of farms increased rapidly in the last decade and in nearly one-fifth of them more than twice as many farms were reported in 1900 as in 1890. Barry, Eaton, Hillsdale, and Oscoda counties show slight decreases.

Increases in the total farm acreage occurred in all counties except Keweenaw, Oscoda, and Washtenaw. These three counties, together with Livingston and Oakland, also showed decreases in improved acreage. In 1900 nearly one-sixth of the counties reported double the acreage reported ten years before. The average size of the farms of the state is 86.4 acres, ranging from 46.3 acres in Gogebic county to 170.6 acres in Roscommon county. As a rule, it is largest in the counties of the northern peninsula.

For the state, the average value of farms is \$2,866. Nearly three-fourths of the counties show an increase in the value of land and improvements since 1890. With three exceptions, the counties showing decreased values are in the extreme southern part of the state, where the average value per farm is much higher than elsewhere, being in some counties more than \$4,000. For the state, the average value of implements and machinery, June 1, 1900, was \$141.67. Oakland county alone shows a decrease since 1890.

Keweenaw, in the northern peninsula, and twelve counties in the lower part of the southern peninsula, report lower values of live stock than they reported ten years before. In almost every county in the northern peninsula the value reported in 1900 was more than twice as great as in 1890.

The average expenditure per farm for labor in 1899 was greatest in the northern and southern counties, the central counties, as a rule, expending only about one-fourth as much. For fertilizers, the average expenditure per farm in 1899 was more than twice as great as in 1889. It varied greatly in the different counties but was generally largest in the southern counties.

FARM TENURE.

Table 4 gives a comparative exhibit of farm tenure for 1880, 1890, and 1900.

The farms operated by tenants are divided into groups designated as farms operated by "cash tenants," and farms operated by "share tenants." These groups comprise, respectively: (1) Farms operated by individuals who pay a cash rental or a stated amount of labor or farm produce; (2) farms operated by individuals who pay as rental a stated share of the products.

In Table 5 farms of specified tenures are classified for 1900 according to race of farmer, and "farms operated by owners" are subdivided into groups, designated as farms operated by "owners," "part owners," "owners and tenants," and "managers." These groups comprise, respectively: (1) Farms operated by individuals who own all the land they cultivate; (2) farms operated by individuals who own a part of the land and rent the remainder from others; (3) farms operated under the joint

direction and by the united labor of two or more individuals, one owning the farm or a part of it, and the other, or others owning no part, but receiving for supervision or labor a share of the products; and (4) farms operated by individuals who receive for their supervision and other services a fixed salary from the owners.

TABLE 4.—NUMBER AND PER CENT OF FARMS OF SPECIFIED TENURES: 1880 TO 1900.

| YEAR. | Total number of farms. | NUMBER OF FARMS OPERATED BY— | | | PER CENT OF FARMS OPERATED BY— | | |
|-------|------------------------|------------------------------|---------------|----------------|--------------------------------|---------------|----------------|
| | | Owners. ¹ | Cash tenants. | Share tenants. | Owners. ¹ | Cash tenants. | Share tenants. |
| 1900 | 203,261 | 171,048 | 8,731 | 22,482 | 84.1 | 4.5 | 11.1 |
| 1890 | 172,344 | 148,208 | 8,212 | 15,924 | 86.0 | 4.8 | 9.2 |
| 1880 | 151,008 | 138,597 | 5,015 | 10,396 | 90.0 | 3.3 | 6.7 |

¹ Including "part owners," "owners and tenants," and "managers."

TABLE 5.—NUMBER AND PER CENT OF FARMS OF SPECIFIED TENURES, JUNE 1, 1900, CLASSIFIED BY RACE OF FARMER.

PART 1.—NUMBER OF FARMS OF SPECIFIED TENURES.

| RACE. | Total number of farms. | Owners. | Part owners. | Owners and tenants. | Managers. | Cash tenants. | Share tenants. |
|-----------|------------------------|---------|--------------|---------------------|-----------|---------------|----------------|
| The State | 203,261 | 150,871 | 15,618 | 2,825 | 2,234 | 9,781 | 22,482 |
| White | 202,288 | 150,167 | 15,532 | 2,819 | 2,281 | 9,698 | 22,346 |
| Colored | 973 | 704 | 86 | 6 | 5 | 88 | 136 |
| Indian | 347 | 313 | 7 | 4 | | 10 | 18 |
| Negro | 626 | 391 | 79 | 2 | 3 | 28 | 123 |

PART 2.—PER CENT OF FARMS OF SPECIFIED TENURES.

| | | | | | | | |
|-----------|-------|------|-----|-----|-----|-----|------|
| The State | 100.0 | 74.2 | 7.7 | 1.1 | 1.1 | 4.8 | 11.1 |
| White | 100.0 | 74.2 | 7.7 | 1.1 | 1.1 | 4.8 | 11.1 |
| Colored | 100.0 | 72.4 | 8.8 | 0.6 | 0.5 | 3.9 | 14.0 |

Since 1880 the total number of farms has increased 49,253, or 32.0 per cent. In the same period owners increased in number 32,451, or 23.4 per cent; cash tenants, 4,716, or 94.0 per cent; and share tenants, 12,086, or 116.3 per cent. As shown in Table 4, the increase in the number of farms operated by tenants was greatest between 1880 and 1890, while the most rapid increase in the number of farms operated by owners was in the last decade.

Although the tenant-operated farms comprise but 15.9 per cent of the total, their number is rapidly increasing. Since 1890 the number of farms operated by cash tenants has increased but 18.5 per cent, while those of share tenants show a gain of 41.2 per cent. One-half of the tenant farms are hay and grain and live-stock farms.

Of the farms of the state 99.5 per cent are operated by white farmers and 0.5 per cent by colored farmers. Of the white farmers 83.0 per cent own all or a part of the farms they operate and 17.0 per cent operate farms owned by others. For the colored farmers, the corresponding percentages are 81.8 and 18.2. Three-fourths of the negro farmers are owners or part owners, and most of the remainder are share tenants. The Indian farmers are nearly all owners.

No previous census has reported the number of farms operated by "part owners," "owners and tenants," or "managers," but it is believed that the number of farms conducted by the last-named class is constantly increasing.

FARMS CLASSIFIED BY RACE OF FARMER AND BY TENURE.

Tables 6 and 7 present the principal statistics for farms classified by race of farmer and by tenure.

TABLE 6.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY RACE OF FARMER, AND BY TENURE, WITH PERCENTAGES.

| RACE OF FARMER, AND TENURE. | Number of farms. | NUMBER OF ACRES IN FARMS. | | | VALUE OF FARM PROPERTY. | |
|-----------------------------|------------------|---------------------------|------------|-----------|-------------------------|-----------|
| | | Average. | Total. | Per cent. | Total. | Per cent. |
| The State..... | 203,261 | 86.4 | 17,561,698 | 100.0 | \$890,355,734 | 100.0 |
| White farmers..... | 202,288 | 86.6 | 17,508,295 | 99.7 | 688,605,612 | 99.7 |
| Negro farmers..... | 626 | 61.1 | 88,259 | 0.2 | 1,441,896 | 0.2 |
| Indian farmers..... | 347 | 43.6 | 15,144 | 0.1 | 308,236 | 0.1 |
| Owners..... | 153,871 | 79.7 | 12,023,620 | 68.5 | 460,800,467 | 66.7 |
| Part owners..... | 15,618 | 114.9 | 1,793,841 | 10.2 | 68,793,974 | 10.0 |
| Owners and tenants..... | 2,325 | 112.2 | 260,816 | 1.5 | 10,955,379 | 1.6 |
| Managers..... | 2,234 | 189.9 | 424,311 | 2.4 | 19,342,574 | 2.8 |
| Cash tenants..... | 8,731 | 74.0 | 719,713 | 4.1 | 36,920,632 | 5.8 |
| Share tenants..... | 22,432 | 104.1 | 2,339,397 | 13.3 | 93,542,678 | 13.6 |

TABLE 7.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY RACE OF FARMER, AND BY TENURE.

| RACE OF FARMER, AND TENURE. | AVERAGE VALUES PER FARM OF— | | | | | Per cent of gross income on total invest- ment in farm property. |
|--------------------------------|---|-----------------|--|----------------|--|---|
| | Farm property, June 1, 1900. | | | | Gross income (products of 1899 not fed to live stock). | |
| | Land and im- prove- ments (except build- ings). | Build- ings. | Imple- ments and ma- chinery. | Live stock. | | |
| The State..... | \$2,084 | \$782 | \$141 | \$989 | \$543 | 15.9 |
| White farmers..... | 2,088 | 784 | 142 | 390 | 542 | 15.9 |
| Negro farmers..... | 1,540 | 404 | 89 | 270 | 364 | 15.8 |
| Indian farmers..... | 563 | 157 | 45 | 123 | 133 | 15.0 |
| Owners..... | 1,821 | 730 | 136 | 367 | 505 | 16.5 |
| Part owners..... | 2,817 | 939 | 175 | 474 | 698 | 15.9 |
| Owners and tenants..... | 2,845 | 1,147 | 189 | 581 | 781 | 15.5 |
| Managers..... | 5,802 | 1,801 | 260 | 732 | 1,089 | 12.6 |
| Cash tenants..... | 2,549 | 760 | 130 | 355 | 525 | 13.8 |
| Share tenants..... | 2,691 | 892 | 144 | 434 | 596 | 14.3 |

The average area, value, and gross income of farms, and the percentage of gross income, are higher for white than for colored farmers, and higher for negro than for Indian farmers. The aggregate value of the farm property of negroes and Indians constitutes but three-tenths of 1 per cent of the total for the state.

The large size, and the relatively high average values of the several classes of farm property, shown for farms operated by managers are due in part to the fact that a number of these farms are adjuncts of public institutions, while others belong to wealthy individuals and are operated in connection with their summer homes. Such farms are not, as a rule, operated primarily for profit, which fact

explains the comparatively low percentage of gross income shown for this group.

FARMS CLASSIFIED BY AREA.

Tables 8 and 9 present the principal statistics for farms classified by area.

TABLE 8.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY AREA, WITH PERCENTAGES

| AREA. | Number of farms. | NUMBER OF ACRES IN FARMS. | | | VALUE OF FARM PROPERTY. | |
|---------------------------|------------------|---------------------------|------------|-----------|-------------------------|-----------|
| | | Average. | Total. | Per cent. | Total. | Per cent. |
| The State..... | 203,261 | 86.4 | 17,561,698 | 100.0 | \$890,355,734 | 100.0 |
| Under 3 acres..... | 1,058 | 2.0 | 2,161 | (1) | 1,457,641 | 0.2 |
| 3 to 9 acres..... | 5,077 | 5.8 | 29,693 | 0.2 | 6,493,843 | 0.9 |
| 10 to 19 acres..... | 7,335 | 13.4 | 98,517 | 0.6 | 11,540,218 | 1.7 |
| 20 to 49 acres..... | 59,197 | 36.9 | 2,183,332 | 12.4 | 98,263,277 | 14.2 |
| 50 to 99 acres..... | 71,021 | 74.7 | 5,305,994 | 30.2 | 213,183,341 | 30.9 |
| 100 to 174 acres..... | 43,741 | 130.1 | 5,652,182 | 32.4 | 215,608,248 | 31.2 |
| 175 to 259 acres..... | 10,815 | 209.0 | 2,259,811 | 12.9 | 88,035,255 | 12.0 |
| 260 to 499 acres..... | 4,364 | 324.5 | 1,415,908 | 8.1 | 48,095,059 | 7.0 |
| 500 to 999 acres..... | 517 | 628.3 | 324,843 | 1.8 | 9,451,985 | 1.4 |
| 1,000 acres and over..... | 136 | 1,832.6 | 249,237 | 1.4 | 8,316,871 | 0.5 |

¹ Less than one-tenth of 1 per cent.

TABLE 9.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY AREA.

| AREA. | AVERAGE VALUES PER FARM OF— | | | | | Per cent of gross income on total investment in farm property. |
|---------------------------|---|------------|---------------------------|-------------|--|--|
| | Farm property, June 1, 1900. | | | | Gross income (products of 1899 not fed to live stock). | |
| | Land and improvements (except buildings). | Buildings. | Implements and machinery. | Live stock. | | |
| The State----- | \$2,084 | \$782 | \$141 | \$389 | \$543 | 15.9 |
| Under 3 acres----- | 42 | 1,177 | 51 | 108 | 465 | 33.8 |
| 3 to 9 acres----- | 328 | 506 | 51 | 94 | 211 | 16.5 |
| 10 to 19 acres----- | 901 | 486 | 60 | 126 | 237 | 15.1 |
| 20 to 49 acres----- | 951 | 415 | 83 | 211 | 283 | 17.0 |
| 50 to 99 acres----- | 1,802 | 598 | 139 | 368 | 483 | 16.3 |
| 100 to 174 acres----- | 3,070 | 1,108 | 127 | 554 | 772 | 15.7 |
| 175 to 259 acres----- | 4,991 | 1,609 | 233 | 815 | 1,146 | 14.9 |
| 260 to 499 acres----- | 7,851 | 2,187 | 335 | 1,127 | 1,605 | 14.6 |
| 500 to 999 acres----- | 13,080 | 2,878 | 485 | 1,839 | 2,707 | 14.8 |
| 1,000 acres and over----- | 17,496 | 3,445 | 692 | 2,756 | 4,153 | 17.0 |

The group of farms containing from 50 to 99 acres each comprises a larger number of farms than any other, and the combined areas and farm property of this and the next higher group comprise about two-thirds of the total area of farms and 62.1 per cent of the total value of farm property.

With few exceptions the average values of all classes of farm property increase with the size of the farms. For the group of farms of less than 3 acres each, the values are relatively high, as it includes a large number of market gardens, city dairies, poultry farms, and florists' establishments. The income from these industries is determined, not so much by the acreage of land used, as by the amount of capital invested in buildings, live stock, and implements, and the amount expended for labor and fertilizers.

The average gross incomes per acre for the various

groups classified by area are as follows: Farms under 3 acres, \$227.78; 3 to 9 acres, \$36.05; 10 to 19 acres, \$17.07; 20 to 49 acres, \$7.66; 50 to 99 acres, \$6.53; 100 to 174 acres, \$5.93; 175 to 259 acres, \$5.48; 260 to 499 acres, \$4.95; 500 to 999 acres, \$4.31; 1,000 acres and over, \$2.26.

FARMS CLASSIFIED BY PRINCIPAL SOURCE OF INCOME.

In Tables 10 and 11 farms are classified by principal source of income. If the value of the hay and grain raised on any farm exceeds that of any other crop and constitutes at least 40 per cent of the total value of products not fed to live stock, the farm is classified as a "hay and grain" farm; similarly, if vegetables are the leading crop, constituting 40 per cent of the value of the net farm products, it is a "vegetable" farm. The farms of the other groups are classified in accordance with the same general principle. "Miscellaneous" farms are those whose operators do not derive 40 per cent of their income from any one class of farm products. Farms which yielded no income in 1899 are classified according to the agricultural operations upon other farms in the same locality.

TABLE 10.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY PRINCIPAL SOURCE OF INCOME, WITH PERCENTAGES.

| PRINCIPAL SOURCE OF INCOME. | Number of farms. | NUMBER OF ACRES IN FARMS. | | | VALUE OF FARM PROPERTY. | |
|-----------------------------|------------------|---------------------------|------------|------------------|-------------------------|-----------|
| | | Average. | Total. | Per cent. | Total. | Per cent. |
| The State..... | 203,261 | 86.4 | 17,561,698 | 100.0 | \$690,355,784 | 100.0 |
| Hay and grain..... | 88,582 | 96.5 | 3,724,829 | 21.2 | 147,773,047 | 21.4 |
| Vegetables..... | 9,348 | 53.2 | 515,950 | 3.0 | 24,837,922 | 3.6 |
| Fruits..... | 5,854 | 43.7 | 250,077 | 1.4 | 19,221,490 | 2.8 |
| Live stock..... | 68,998 | 91.6 | 6,822,088 | 38.0 | 252,270,018 | 36.5 |
| Dairy produce..... | 14,116 | 73.2 | 1,076,061 | 6.1 | 46,880,798 | 6.8 |
| Sugar..... | 694 | 54.5 | 37,792 | 0.2 | 2,189,470 | 0.3 |
| Flowers and plants..... | 215 | 6.0 | 1,250 | (¹) | 1,490,930 | 0.2 |
| Nursery products..... | 54 | 111.6 | 6,020 | (¹) | 528,580 | 0.1 |
| Miscellaneous..... | 65,905 | 85.4 | 5,628,087 | 32.1 | 195,157,684 | 28.3 |

¹ Less than one-tenth of 1 per cent.

TABLE 11.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY PRINCIPAL SOURCE OF INCOME.

| PRINCIPAL SOURCE OF INCOME. | AVERAGE VALUES PER FARM OF— | | | | | Per cent of gross income on total investment in farm property. |
|-----------------------------|---|------------|--------------------------------|-------------|--|--|
| | Farm property, June 1, 1900. | | | | Gross income (products of 1899 not fed to live stock). | |
| | Land and improvements (except buildings). | Buildings. | Implementations and machinery. | Live stock. | | |
| The State..... | \$2,801 | \$782 | \$141 | \$389 | \$540 | 15.9 |
| Hay and grain..... | 2,549 | 799 | 136 | 846 | 546 | 14.8 |
| Vegetables..... | 1,752 | 580 | 103 | 317 | 452 | 17.0 |
| Fruits..... | 2,282 | 965 | 122 | 211 | 636 | 17.7 |
| Live stock..... | 2,141 | 878 | 150 | 483 | 580 | 16.0 |
| Dairy produce..... | 2,018 | 742 | 133 | 423 | 609 | 15.3 |
| Sugar..... | 2,125 | 626 | 135 | 273 | 531 | 17.8 |
| Flowers and plants..... | 3,766 | 2,957 | 189 | 50 | 2,468 | 55.4 |
| Nursery products..... | 7,007 | 1,867 | 593 | 381 | 6,288 | 64.2 |
| Miscellaneous..... | 1,785 | 690 | 135 | 351 | 489 | 16.5 |

For the several classes of farms the average values per acre of products not fed to live stock are as follows: Farms whose operators derive their principal income from flowers and plants, \$411.81; nursery stock, \$56.32; fruit, \$13.61; sugar, \$10.29; vegetables, \$8.18; dairy produce, \$6.68; live stock, \$6.39; miscellaneous, \$5.78; hay and grain, \$5.66.

The wide variations shown in the averages and percentages of gross income are largely due to the fact that in computing gross income no deduction is made for expenditures in operation. For florists' establishments, nurseries, and fruit farms, the average expenditure for such items as labor and fertilizers represents a far greater percentage of the gross income than in the case of "hay and grain," "live stock," or "miscellaneous" farms. If it were possible to present the average net income, the variations shown in the percentages of income on investment would be much smaller.

FARMS CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK.

Tables 12 and 13 present data relating to farms classified by the reported value of products not fed to live stock.

TABLE 12.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK, WITH PERCENTAGES.

| VALUE OF PRODUCTS NOT FED TO LIVE STOCK. | Number of farms. | NUMBER OF ACRES IN FARMS. | | | VALUE OF FARM PROPERTY. | |
|--|------------------|---------------------------|------------|-----------|-------------------------|-----------|
| | | Average. | Total. | Per cent. | Total. | Per cent. |
| The State..... | 203,261 | 86.4 | 17,561,698 | 100.0 | \$690,355,784 | 100.0 |
| \$0..... | 906 | 53.9 | 51,511 | 0.3 | 1,001,420 | 0.1 |
| \$1 to \$49..... | 4,252 | 43.1 | 183,294 | 1.0 | 3,570,240 | 0.5 |
| \$50 to \$99..... | 9,209 | 41.9 | 386,247 | 2.2 | 9,897,430 | 1.4 |
| \$100 to \$249..... | 42,390 | 49.7 | 2,106,028 | 12.0 | 61,871,349 | 9.0 |
| \$250 to \$499..... | 64,482 | 68.7 | 4,427,379 | 25.2 | 161,612,476 | 23.4 |
| \$500 to \$999..... | 57,724 | 104.0 | 6,001,461 | 34.2 | 250,929,264 | 36.4 |
| \$1,000 to \$2,499..... | 22,469 | 168.4 | 3,788,279 | 21.6 | 173,500,896 | 25.1 |
| \$2,500 and over..... | 1,799 | 343.2 | 617,499 | 3.5 | 28,473,170 | 4.1 |

TABLE 13.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK.

| VALUE OF PRODUCTS NOT FED TO LIVE STOCK. | AVERAGE VALUES PER FARM OF— | | | | | Per cent of gross income on total investment in farm property. |
|--|---|------------|--------------------------------|-------------|--|--|
| | Farm property, June 1, 1900. | | | | Gross income (products of 1899 not fed to live stock). | |
| | Land and improvements (except buildings). | Buildings. | Implementations and machinery. | Live stock. | | |
| The State..... | \$2,084 | \$782 | \$141 | \$389 | \$540 | 15.9 |
| \$0..... | 763 | 201 | 80 | 111 | 23 | (¹) 3.5 |
| \$1 to \$49..... | 539 | 190 | 33 | 75 | 72 | 7.1 |
| \$50 to \$99..... | 628 | 244 | 42 | 106 | 177 | 12.2 |
| \$100 to \$249..... | 859 | 351 | 67 | 183 | 344 | 14.5 |
| \$250 to \$499..... | 1,490 | 596 | 117 | 504 | 693 | 15.9 |
| \$500 to \$999..... | 2,663 | 1,007 | 188 | 494 | 1,378 | 17.9 |
| \$1,000 to \$2,499..... | 4,883 | 1,712 | 282 | 594 | 3,899 | 24.6 |
| \$2,500 and over..... | 10,408 | 3,259 | 515 | 1,645 | | |

¹ Less than one-tenth of 1 per cent.

The greater number of the 906 farms reporting no income were operated by white owners, and range in size from 20 to 100 acres. This class of farms includes all farms opened for cultivation too late to produce a crop in 1899; all farms idle in that year; the numerous summer homes or country estates along the lakes which are not held for the profit to be derived from operation; and farms recently rented, the tenants in charge of which, June 1, 1900, were unable to give any definite information concerning the products of the preceding year. To this extent the reports fall short of giving the total value of farm products.

LIVE STOCK.

At the request of the various live-stock associations of the country, a new classification of domestic animals was adopted for the census of 1900. The age grouping for neat cattle was determined in accordance with their present and prospective relations to the dairy industry and the supply of meat products. Horses and mules are classified by age, and neat cattle and sheep by age and sex. The new classification permits a very close comparison with previous census reports.

Table 14 presents a summary of live-stock statistics.

TABLE 14.—DOMESTIC ANIMALS, FOWLS, AND BEES ON FARMS, JUNE 1, 1900, WITH TOTAL AND AVERAGE VALUES, AND NUMBER OF DOMESTIC ANIMALS NOT ON FARMS.

| LIVE STOCK. | Age in years. | ON FARMS. | | | NOT ON FARMS. |
|-------------------------------------|---------------|-----------|-------------|----------------|---------------|
| | | Number. | Value. | Average value. | Number. |
| Calves | Under 1 | 375,482 | \$2,490,467 | \$6.63 | 6,489 |
| Steers | 1 and under 2 | 155,981 | 2,510,554 | 16.10 | 1,448 |
| Steers | 2 and under 3 | 49,748 | 1,292,829 | 25.99 | 392 |
| Steers | 3 and over | 4,555 | 158,641 | 34.83 | 182 |
| Bulls | 1 and over | 19,406 | 547,254 | 28.20 | 171 |
| Heifers | 1 and under 2 | 161,174 | 2,685,818 | 16.66 | 2,328 |
| Cows kept for milk | 2 and over | 568,905 | 17,281,835 | 30.05 | 37,939 |
| Cows and heifers not kept for milk. | 2 and over | 46,205 | 1,197,883 | 25.93 | 398 |
| Colts | Under 1 | 81,018 | 746,534 | 24.07 | 883 |
| Horses | 1 and under 2 | 88,406 | 1,711,511 | 44.56 | 852 |
| Horses | 2 and over | 517,135 | 33,450,482 | 64.68 | 100,804 |
| Mule colts | Under 1 | 349 | 9,030 | 25.79 | 1 |
| Mules | 1 and under 2 | 188 | 7,856 | 41.79 | 5 |
| Mules | 2 and over | 2,379 | 141,619 | 59.53 | 374 |
| Asses and burros | All ages | 95 | 8,133 | 38.61 | 89 |
| Lambs | Under 1 | 1,121,679 | 1,995,321 | 1.73 | 1,762 |
| Sheep (ewes) | 1 and over | 1,608,503 | 4,737,021 | 3.14 | 3,209 |
| Sheep (rams and wethers). | 1 and over | 117,427 | 490,322 | 4.18 | 503 |
| Swine | All ages | 1,165,200 | 4,588,898 | 3.94 | 22,908 |
| Goats | All ages | 2,861 | 10,008 | 3.50 | 603 |
| Fowls: ¹ | | | | | |
| Chickens ² | | 8,033,581 | | | |
| Turkeys | | 191,863 | | | |
| Geese | | 73,267 | | | |
| Ducks | | 106,893 | | | |
| Bees (swarms of) | | 100,397 | 352,469 | 3.51 | |
| Unclassified | | | 7,295 | | |
| Value of all live stock | | | 79,042,644 | | |

¹ The number reported is of fowls over 3 months old. The value is of all, old and young.

² Including Guinea fowls.

The total value of all live stock on farms, June 1, 1900, was \$79,042,644. Of this amount, 45.4 per cent represents the value of horses; 21.9 per cent, that of dairy cows; 13.8 per cent, that of other neat cattle; 9.0 per

cent, that of sheep; and 9.9 per cent, that of all other live stock.

No reports were secured of the value of live stock not on farms, but it is probable that such animals have higher average values than those on farms. Allowing the same averages, however, the total value of domestic animals not on farms is \$8,011,511. Nearly one-fifth as many horses, 2 years old and over, are used in cities and villages as in agricultural operations. Exclusive of poultry and bees not on farms, the total value of live stock in the state is approximately \$87,054,155.

CHANGES IN LIVE STOCK ON FARMS.

The following table shows the changes since 1850 in the number of the most important domestic animals.

TABLE 15.—NUMBER OF SPECIFIED DOMESTIC ANIMALS ON FARMS: 1850 TO 1900.

| YEAR. | Dairy cows. | Other neat cattle. | Horses. | Mules and asses. | Sheep. ¹ | Swine. |
|-------|-------------|--------------------|---------|------------------|---------------------|-----------|
| 1850 | 563,905 | 812,503 | 586,559 | 3,011 | 1,625,980 | 1,165,200 |
| 1860 | 497,611 | 549,160 | 516,117 | 3,822 | 2,403,318 | 1,123,141 |
| 1870 | 384,578 | 507,053 | 378,778 | 5,083 | 2,183,889 | 961,071 |
| 1880 | 250,859 | 296,670 | 228,302 | 2,353 | 1,985,906 | 417,811 |
| 1890 | 179,848 | 300,801 | 186,917 | 890 | 1,271,748 | 372,386 |
| 1900 | 99,676 | 174,821 | 58,536 | 70 | 746,435 | 205,847 |

¹ Not including lambs.

The development of mining and of the fruit and vegetable growing interests in the last decade has tended to draw the attention of Michigan farmers away from the live-stock industry. Sheep and mules and asses have decreased in number, while most other classes of live stock show smaller relative increases than in preceding decades. Dairy cows, however, have increased steadily in number for the past fifty years, the gain since 1850 amounting to 13.3 per cent. Nearly five times as many "other neat cattle" were reported in 1900 as in 1850. The gain in the last decade was 48.0 per cent. The number of "neat cattle" in 1900, however, includes 375,482 calves. As it is uncertain how many calves were reported under this head in 1890, the increase shown for the last decade may be more apparent than real. About ten times as many horses were reported in 1900 as in 1850, and a gain of 13.6 per cent was made in the last ten years. The number of mules increased rapidly from 1850 to 1880, but in the last two decades there has been a marked decrease. The number of sheep increased gradually from 1850 until 1890, but the last decade shows a decrease of 32.3 per cent. More than five times as many swine were reported in 1900 as in 1850, and 3.5 per cent more than in 1890.

In comparing the poultry report of 1900 (see Table 14) with that of the Eleventh Census, it should be borne in mind that in 1900 the enumerators were instructed not to report fowls less than 3 months old, while in 1890 no such limitation was made. Notwithstanding this fact, the several classes of fowls show increases since 1890, as follows: Chickens, 37.3 per cent; ducks, 7.7 per cent; turkeys, 3.2 per cent; geese, 0.5 per cent.

ANIMAL PRODUCTS.

Table 16 is a summarized statement of the animal products of 1899.

TABLE 16.—QUANTITIES AND VALUES OF SPECIFIED ANIMAL PRODUCTS, AND VALUES OF POULTRY RAISED, ANIMALS SOLD, AND ANIMALS SLAUGHTERED ON FARMS IN 1899.

| PRODUCTS. | Unit of measure. | Quantity. | Value. |
|----------------------|------------------|--------------|--------------|
| Wool | Pounds | 12,202,844 | \$2,454,399 |
| Mohair and goat hair | Pounds | 1,833 | 419 |
| Milk | Gallons | 1309,617,046 | \$16,908,087 |
| Butter | Pounds | 60,051,998 | |
| Cheese | Pounds | 331,176 | 6,104,462 |
| Eggs | Dozens | 54,318,410 | |
| Poultry | | | 4,551,945 |
| Honey | Pounds | 2,099,460 | 230,012 |
| Wax | Pounds | 88,860 | |
| Animals sold | | | 18,343,856 |
| Animals slaughtered | | | 5,338,786 |
| Total | | | 58,921,966 |

¹ Comprises all milk produced, whether sold, consumed, or made into butter or cheese.

² Comprises the value of all milk sold or consumed and of all butter and cheese made on farms.

The value of animal products in 1899 was \$58,921,966, or 36.8 per cent of the value of all farm products, and 49.1 per cent of the gross farm income. Of the total value, 43.9 per cent represents the value of animals sold and animals slaughtered on farms; 31.3 per cent, that of dairy products; 19.8 per cent, that of eggs and poultry; and 5.0 per cent, that of wool, mohair, goat hair, honey, and wax.

ANIMALS SOLD AND ANIMALS SLAUGHTERED.

Of the whole number of farmers reporting live stock, 132,850, or 68.7 per cent, reported sales of live animals, and 147,656, or 76.3 per cent, reported animals slaughtered on farms. The average amount received in 1899 from the sale of live animals was \$138.08 per farm reporting, and the average value of animals slaughtered on farms was \$36.12. In obtaining reports of the receipts from sales of live animals, the enumerators were instructed to secure from each farm operator a statement of the amount received from sales in 1899, less the amount paid for animals purchased in the same year.

DAIRY PRODUCTS.

The quantity of milk produced in 1899 was 85,079,558 gallons greater than in 1889, an increase of 37.9 per cent. The quantity of butter made on farms increased 9,854,517 pounds, or 19.6 per cent, and that of cheese, 2,494 pounds, or 0.8 per cent in the same time. The making of butter and cheese is being rapidly transferred to creameries and cheese factories, as is shown by the fact that the quantity of milk sold in 1899 was seven times as great as the quantity sold in 1879. The sales of milk were not separately reported in 1890.

Of the \$16,908,087 given in Table 16 as the value of all dairy products, \$7,005,471, or 41.4 per cent, represents

the value of products consumed on farms, and \$9,897,616, or 58.6 per cent, represents the amount received from sales. Of the latter amount, \$5,099,679 was derived from the sale of 34,335,641 pounds of butter; \$4,643,577, from 55,635,108 gallons of milk; \$124,802, from 231,139 gallons of cream; and \$29,558, from 316,207 pounds of cheese.

POULTRY AND EGGS.

The total value of the products of the poultry industry in 1899 was \$10,656,407, of which 57.3 per cent represents the value of eggs produced, and 42.7 per cent, that of poultry raised. The production of eggs in 1900 was more than twenty million dozens in excess of that in 1890, the per cent of gain amounting to 58.3.

WOOL.

Every decade from 1850 to 1890 shows a considerable increase in wool reported, but the quantity reported in 1900 was 1.4 per cent less than that reported ten years before. The average weight of fleeces, however, increased from 6.3 pounds in 1890 to 7.0 pounds in 1900.

HONEY AND WAX.

The quantity of honey produced in 1899 was 2,099,460 pounds, or 15.6 per cent less than the production of 1880. The production of wax in 1899 was 45.2 per cent greater than ten years before.

HORSES AND DAIRY COWS ON SPECIFIED CLASSES OF FARMS.

Table 17 presents, for the leading groups of farms, the number reporting horses and dairy cows, the total number of these animals, and the average number per farm. In computing the averages presented, only those farms which report the kind of stock under consideration are included.

TABLE 17.—HORSES AND DAIRY COWS ON SPECIFIED CLASSES OF FARMS, JUNE 1, 1900.

| CLASSES. | HORSES. | | | DAIRY COWS. | | |
|----------------------------|------------------|---------|-------------------|------------------|---------|-------------------|
| | Farms reporting. | Number. | Average per farm. | Farms reporting. | Number. | Average per farm. |
| Total | 183,914 | 586,559 | 3.2 | 175,920 | 563,905 | 3.2 |
| White farmers | 183,105 | 584,398 | 3.2 | 175,859 | 562,760 | 3.2 |
| Colored farmers | 809 | 2,161 | 2.7 | 561 | 1,145 | 2.0 |
| Owners ¹ | 152,844 | 475,452 | 3.1 | 147,226 | 464,358 | 3.2 |
| Managers | 1,898 | 10,142 | 5.4 | 1,715 | 9,165 | 5.3 |
| Cash tenants | 8,528 | 26,095 | 3.1 | 7,796 | 27,317 | 3.5 |
| Share tenants | 20,651 | 74,870 | 3.6 | 19,183 | 63,065 | 3.3 |
| Under 20 acres | 9,559 | 14,253 | 1.5 | 7,740 | 12,841 | 1.7 |
| 20 to 99 acres | 118,561 | 314,200 | 2.7 | 112,033 | 295,494 | 2.6 |
| 100 to 174 acres | 42,811 | 162,329 | 3.8 | 41,337 | 170,231 | 4.1 |
| 175 to 259 acres | 10,567 | 53,516 | 5.5 | 10,085 | 52,983 | 5.3 |
| 260 acres and over | 4,916 | 37,261 | 7.6 | 4,725 | 32,351 | 6.8 |
| Hay and grain | 31,242 | 106,947 | 3.4 | 28,839 | 87,549 | 3.1 |
| Vegetable | 7,916 | 19,299 | 2.4 | 5,990 | 12,497 | 2.1 |
| Fruit | 4,667 | 11,012 | 2.4 | 3,608 | 5,070 | 1.8 |
| Live stock | 65,943 | 229,436 | 3.5 | 64,378 | 212,362 | 3.3 |
| Dairy | 12,948 | 88,692 | 3.0 | 14,116 | 74,043 | 5.2 |
| Miscellaneous ² | 61,198 | 181,123 | 3.0 | 59,439 | 170,731 | 2.9 |

¹ Including "part owners" and "owners and tenants."

² Including sugar farms, florists' establishments, and nurseries.

CROPS.

The following table gives the statistics of the principal crops grown in 1899.

TABLE 18.—ACREAGES, QUANTITIES, AND VALUES OF THE PRINCIPAL FARM CROPS IN 1899.

| CROPS. | Acres. | Unit of measure. | Quantities. | Value. |
|--------------------------|-----------|------------------|-------------|--------------|
| Corn | 1,501,189 | Bushels | 44,584,180 | \$17,798,011 |
| Wheat | 1,925,769 | Bushels | 20,535,140 | 12,921,925 |
| Oats | 1,019,438 | Bushels | 36,388,145 | 9,264,385 |
| Barley | 44,965 | Bushels | 1,165,288 | 494,994 |
| Rye | 174,096 | Bushels | 2,180,870 | 1,083,416 |
| Buckwheat | 55,669 | Bushels | 605,830 | 306,311 |
| Flaxseed | 888 | Bushels | 9,309 | 10,108 |
| Clover seed | | Bushels | 67,993 | 290,781 |
| Grass seed | | Bushels | 20,548 | 24,219 |
| Hay and forage | 2,328,498 | Tons | 2,926,694 | 21,792,987 |
| Peppermint | 7,648 | Pounds | 164,177 | 123,444 |
| Tobacco | 97 | Pounds | 64,580 | 5,345 |
| Hops | 10 | Pounds | 8,560 | 5,299 |
| Broom corn | 51 | Pounds | 23,620 | 1,080 |
| Dry beans | 167,025 | Bushels | 1,806,413 | 2,861,020 |
| Dry pease | 71,976 | Bushels | 1,134,431 | 689,133 |
| Potatoes | 311,963 | Bushels | 23,476,444 | 6,759,342 |
| Sweet potatoes | 71 | Bushels | 3,242 | 2,408 |
| Onions | 2,611 | Bushels | 783,908 | 345,310 |
| Chicory | 2,823 | Pounds | 19,870,970 | 64,640 |
| Miscellaneous vegetables | 51,890 | | | 8,048,955 |
| Maple sugar | | Pounds | 802,715 | 26,698 |
| Maple sirup | | Gallons | 82,997 | 73,903 |
| Sorghum cane | 877 | Tons | 193 | 604 |
| Sorghum sirup | | Gallons | 24,059 | 9,882 |
| Sugar beets | 40,247 | Tons | 215,373 | 877,481 |
| Small fruits | 29,197 | | | 1,680,249 |
| Grapes | 110,465 | Centals | 415,304 | 2,503,268 |
| Orchard fruits | 1,389,309 | Bushels | | 3,675,845 |
| Nuts | | | | 7,436 |
| Forest products | | | | 7,530,360 |
| Flowers and plants | 220 | | | 521,987 |
| Seeds | 1,064 | | | 28,700 |
| Nursery products | 1,840 | | | 338,544 |
| Miscellaneous | | | | 12,641 |
| Total | 8,091,791 | | | 92,625,715 |

¹ Estimated from number of vines or trees.

² Including value of wine, raisins, etc.

³ Including value of cider and vinegar.

Of the total value of crops in 1899, cereals contributed 45.2 per cent; hay and forage, 23.5 per cent; vegetables, including potatoes, sweet potatoes, and onions, 11.0 per cent; fruits and nuts, 6.3 per cent; forest products, 8.1 per cent; dry beans and dry pease, 3.3 per cent; and all other products, 2.6 per cent.

The average values per acre of the various crops are as follows: Flowers and plants, \$2,373; nursery products, \$184; onions, \$132; orchard fruits, \$108; small fruits, \$58; miscellaneous vegetables, \$56; tobacco, \$55; grapes, \$48; seeds, \$27; chicory, \$23; sugar beets, \$22; potatoes, \$22; peppermint, \$16; dry beans, \$14; flaxseed, \$11; and cereals, hay and forage, and dry pease, \$9. The crops yielding the highest average returns per acre were grown upon very highly improved land. Their production requires a relatively great amount of labor, and large expenditures for fertilizers.

CEREALS.

In Table 19 the changes in cereal production since 1849 are shown.

TABLE 19.—ACREAGE AND PRODUCTION OF CEREALS: 1849 TO 1899.

PART 1.—ACREAGE.

| YEAR. ¹ | Barley. | Buckwheat. | Corn. | Oats. | Rye. | Wheat. |
|--------------------|---------|------------|-----------|-----------|---------|-----------|
| 1899 | 44,965 | 55,669 | 1,501,189 | 1,019,438 | 174,096 | 1,925,769 |
| 1889 | 99,305 | 70,046 | 994,597 | 1,085,769 | 140,754 | 1,501,225 |
| 1879 | 54,506 | 33,948 | 919,656 | 536,187 | 22,815 | 1,822,749 |

¹ No statistics of acreage were secured prior to 1879.

PART 2.—BUSHELS PRODUCED.

| YEAR. | Barley. | Buckwheat. | Corn. | Oats. | Rye. | Wheat. |
|-------|-----------|------------|------------|------------|-----------|------------|
| 1899 | 1,165,288 | 605,830 | 44,584,180 | 36,388,145 | 2,180,870 | 20,535,140 |
| 1889 | 2,522,876 | 811,977 | 28,785,579 | 36,961,193 | 2,104,713 | 24,771,171 |
| 1879 | 1,204,316 | 413,062 | 32,461,452 | 18,190,793 | 294,918 | 35,582,543 |
| 1869 | 834,558 | 436,755 | 14,086,238 | 8,954,466 | 144,508 | 16,265,773 |
| 1859 | 307,868 | 529,916 | 12,444,676 | 4,036,580 | 514,129 | 8,386,368 |
| 1849 | 75,249 | 472,917 | 5,641,420 | 2,866,056 | 105,871 | 4,925,889 |

The total area devoted to cereals has increased since 1879 from 3,389,861 acres to 4,721,126 acres, a gain of 39.3 per cent. The acreage in rye shows nearly a seven-fold increase within the same time, and the percentages of gain for the other grains are as follows: Oats, 90.1; buckwheat, 64.0; corn, 63.2; and wheat, 5.7. In 1899 the acreage in barley was 54.7 per cent less than in 1889, but only 17.5 per cent less than in 1879. In the last decade there were also slight decreases in the areas devoted to buckwheat and oats, but the acreage under corn increased 50.9 per cent; that under wheat, 28.3 per cent; and that under rye, 23.7 per cent.

The severe winter of 1899-1900 had a disastrous effect upon the wheat crop of that year, the average yield being 6 bushels per acre less than in 1889. The late spring which followed made the sowing of oats and barley impracticable in many counties, and as a result many acres intended for these crops were converted, for that year at least, into fields of corn. The same cause prevented any extensive substitution of oats or barley for winter-killed wheat.

Most of the corn and wheat is grown below the forty-third parallel, more than seven-eighths of the total acreage under cereals being found in the southern half of the lower peninsula.

HAY AND FORAGE.

In 1900, 171,692 farmers, or 84.5 per cent of the total number, reported hay and forage crops. Excluding corn-stalks and corn strippings, an average yield of 1.2 tons per acre was obtained. The acreage in hay and forage in 1899 was 15.0 per cent greater than in 1889. Of the various kinds of hay and forage the acreages and yields were as follows: Wild, salt, and prairie grasses, 59,512 acres and 69,388 tons; millet and Hungarian grasses, 26,463 acres and 34,159 tons; clover, 225,636 acres and 264,312 tons; other tame and cultivated grasses, 1,926,131 acres

and 2,167,808 tons; grains cut green for hay, 42,648 acres and 49,693 tons; forage crops, 47,026 acres and 116,488 tons; and other hay and forage crops, 192,462 acres and 224,846 tons.

In Table 18 the production of cornstalks and corn strippings is included under "hay and forage," but the acreage is contained in that of "corn," as the forage secured was only an incidental product of the corn crop.

ORCHARD FRUITS.

The changes in orchard fruits since 1890 are shown in the following table.

TABLE 20.—ORCHARD TREES AND FRUITS: 1890 AND 1900.

| FRUITS. | NUMBER OF TREES. | | BUSHELS OF FRUIT. | |
|------------------------|------------------|-----------|-------------------|------------|
| | 1900. | 1890. | 1899. | 1889. |
| Apples | 10,927,899 | 8,582,386 | 8,931,569 | 13,154,626 |
| Apricots | 8,663 | 2,629 | 730 | 299 |
| Cherries | 895,375 | 447,334 | 194,541 | 150,526 |
| Peaches | 8,104,416 | 1,919,104 | 338,637 | 216,311 |
| Pears | 1,187,110 | 270,482 | 170,702 | 194,099 |
| Plums and prunes | 1,378,952 | 168,318 | 215,682 | 37,068 |

In 1900 over one-half the farmers in the state reported orchard products, the aggregate value of all products reported being \$3,675,845. Of this amount, the counties of Berrien, Van Buren, and Allegan, in the southwestern part of the state, contributed nearly one-fourth.

The total number of fruit trees in the state on June 1, 1900, exceeded the number reported on the corresponding date in 1890 by 11,140,302. More than one-half of this large gain was in the number of peach trees. In 1890 over three-fourths of all the fruit trees in the state were apple trees and only about one-sixth were peach trees, while in 1900 apple trees contributed less than one-half of the total, and peach trees, considerably more than one-third.

Since 1890, pear trees have increased in number over fourfold, the gain being distributed widely among the counties. More than eight times as many plum trees were reported in 1900 as in 1890, the counties bordering on Lake Michigan showing the greatest increases. These counties also reported the largest number of pear trees.

In addition to the trees given in Table 20, unclassified fruit trees to the number of 28,141 were reported, with a yield of 9,001 bushels of fruit. The value of orchard products, given in Table 18, includes the value of 72,875 barrels of cider, 13,796 barrels of vinegar, and 143,330 pounds of dried and evaporated fruits.

The seasons of 1889 and 1899 were particularly unfavorable to the raising of fruits. The peach crop in the latter year was almost a complete failure in many counties. As the quantity of fruit produced in any year is determined by the nature of the season, it is evident that comparisons of the crops in the census years are useless as indications of the growth or decline of the fruit-growing industry.

SMALL FRUITS.

Of the 29,197 acres devoted to small fruits in 1899, 10,837 acres, or 37.1 per cent, were used in the growing of 18,384,340 quarts of strawberries, and 10,193 acres, or 34.9 per cent, in the growing of 12,119,400 quarts of raspberries. The acreage and production of other berries were as follows: Blackberries and dewberries, 4,385 acres and 5,324,110 quarts; currants, 2,286 acres and 2,721,070 quarts; gooseberries, 559 acres and 673,360 quarts; cranberries, 150 acres and 3,884 bushels; and of other small fruits, 787 acres and 921,610 quarts.

Practically all of the small fruits are grown south of the forty-fourth parallel, the lake counties of Allegan, Berrien, and Van Buren reporting 48.1 per cent of the total acreage in strawberries in 1899, and 46.0 per cent of the total area in raspberries. These counties, situated in the extreme southwestern part of the state on the shores of Lake Michigan, possess unequalled advantages in the cultivation of all kinds of fruits and garden vegetables. In addition to a soil of almost inexhaustible fertility and a climate rendered temperate and equable by the nearness of the lake, they have the advantage of cheap transportation by water for their produce to the markets of Chicago and other large cities.

VEGETABLES.

The total area used in the cultivation of vegetables, including potatoes, sweet potatoes, and onions, was 369,535 acres. Of this area, 311,963 acres, or 84.4 per cent, were devoted to potatoes. This crop was reported in 1900 by 166,317 farmers, or 81.8 per cent of the total number in the state, the average area per farm reporting being 1.9 acres, and the average yield, 75.3 bushels per acre. The area reported in 1890 was 198,476 acres, showing a gain in the last decade of 57.2 per cent. Although grown throughout the state, Montcalm, Kent, Oakland, Wayne, and Mecosta counties reported 27.2 per cent of the total acreage of 1899.

Of the 54,890 acres devoted to miscellaneous vegetables, detailed reports were received for but 21,581 acres, or 39.3 per cent. Of this area, 4,028 acres were devoted to cabbages; 4,007, to sweet corn; 3,051, to cucumbers; 2,371, to tomatoes; 2,231, to muskmelons; 1,845, to celery; and 4,048, to other vegetables.

SUGAR BEETS.

The production of sugar beets in Michigan was reported in 1880, but it is only within the last decade that their cultivation has become an important branch of agriculture. In 1899, 9,085 farmers devoted to this crop an area of 40,247 acres, or an average of 4.4 acres per farm. They obtained and sold from this land 215,373 tons of beets, an average yield of 5.4 tons per acre, and received therefrom \$877,481, an average of \$97 per farm, \$22 per acre, and \$4 per ton.

Over half the counties of the state reported the production of sugar beets, but 78.0 per cent of the total acreage of

1899 was grown in Bay, Tuscola, Saginaw, Allegan, Ottawa, Gratiot, Berrien, and Oakland counties.

As a result of scientific study and experiments in systems of crop rotation, and of cultivation and fertilization, Michigan beet growers have been successful in the last decade in increasing the sugar content of the beets grown, as well as the average yield per acre.

PEPPERMINT.

In 1899, 497 farmers reported a total area of 7,648 acres devoted to peppermint, an average of 15.4 acres per farm. They obtained from this land a product of 164,177 pounds of oil, valued at \$123,444, an average of \$248 per farm and \$16 per acre.

Peppermint was grown in 16 counties. St. Joseph, Van Buren, Allegan, and Cass, ranking in the order named, reported collectively 3,908 acres, or 77.2 per cent of the total area.

CHICORY.

Although but recently started, the growing of chicory has become an important industry in this state. In 1899, 1,104 farmers devoted 2,823 acres to the crop, an average of 2.6 acres per farm, and secured 19,876,970 pounds of chicory, valued at \$64,640, an average of \$59 per farm and \$23 per acre. Chicory was reported from 14 counties, but Bay, St. Clair, Tuscola, and Saginaw reported about nine-tenths of the total product, the first-named county being the pioneer in the industry. In 1899 Michigan produced more than nine-tenths of all the chicory grown in the country.

TOBACCO.

The present census shows that in 1899 tobacco was grown by 102 farmers who devoted an aggregate area of 97 acres, or an average area of nearly one acre per farm, to the crop. From this area they secured 64,580 pounds of tobacco, a gain in ten years of 438.9 per cent. The crop reached its highest point in 1859, when the total production amounted to 121,099 pounds. The average yield per acre in 1889 was 545 pounds, while in 1899 it was 633 pounds. The total value of the crop in the latter year was \$5,345, an average of \$52 for each farm reporting.

FLORICULTURE.

In 1899, flowers and plants, valued at \$521,987, were cultivated by the operators of 287 farms and florists' establishments. Of this number, 215 were commercial florists

who reported floral products valued at \$500,623, and other products worth \$29,970. These florists reported capital invested as follows: In land and improvements, \$809,735; in buildings, \$635,805; in implements, \$40,670; and in live stock, \$10,720. They expended \$7,280 for fertilizers, and \$132,595, or 25.0 per cent of the value of their gross product, for labor.

Of the 2,593,230 square feet under glass, the 215 florists reported 1,567,408 square feet, and the 743 truck farmers, 1,025,822 square feet.

SEEDS.

In 1900, 219 farmers reported the sale of seeds, cultivating 1,064 acres, and securing a product valued at \$28,700. Jackson, Charlevoix, Berrien, Wayne, and Allegan counties, ranking in the order named, reported an aggregate area of 1,014 acres, and a total product valued at \$24,575.

NURSERIES.

Nursery stock valued at \$338,544 was reported by 159 farmers and nurserymen. The 54 commercial nurserymen reported \$319,804 derived from the sale of nursery products, and \$19,744 from the sale of other products. The area of land used was 6,029 acres, and the gross income per acre \$56.32. The total investment was \$528,530; \$378,355 in land, \$100,800 in buildings, \$28,795 in implements, and \$20,580 in live stock. Fertilizers cost \$7,637, and farm labor, \$71,435, or 21.0 per cent of the value of the gross product.

LABOR AND FERTILIZERS.

The total expenditure for labor on farms in 1899, including the value of board furnished, was \$10,717,220, or an average of \$53 per farm. The average was highest for the most intensively cultivated farms, being \$1,323 for nurseries, \$617 for florists' establishments, \$156 for sugar farms, \$100 for fruit farms, \$55 for live-stock farms, \$54 each for vegetable farms and dairy farms, and \$52 for hay and grain farms. "Managers" expended, on an average, \$323; "cash tenants," \$52; "share tenants," \$50; and "owners," \$47. White farmers expended \$53, and colored farmers, \$20 per farm.

Fertilizers purchased in 1899 cost \$402,360, an average of \$2.42 per farm, and an increase since 1889 of 184.6 per cent. The average expenditure was \$141 for nurseries, \$34 for florists' establishments, \$6 for sugar and vegetable farms, \$5 for fruit farms, \$3 for dairy farms, and \$2 each for live-stock and hay and grain farms.